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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,272	09/25/2001	Michael P. Lyle	RECOP018	9955

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VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER	
PYZOCHA, MICHAEL J	
ART UNIT	**PAPER NUMBER**
2137	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/964,272	LYLE ET AL.	
	Examiner	Art Unit	
	Michael Pyzocha	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13,15-17,19-21 and 23-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,13,15-17,19-21 and 23-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11, 13, 15-17, 19-21, and 23-26 are pending.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/01/2007 has been entered.

Response to Amendment

3. It is noted that claim 21 has the status identifier of "Previously Presented" when there are amendments to this claim and the status identifier should read "Currently Amended".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-11, 13, 15-17, 19-21, and 23-26 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The independent claims now recite that the invalid transitions are direct transitions from the first state to the invalid state. However, the specification never describes the transitions as being direct. The specification actually teaches that the transitions are not necessarily direct. Specifically referring to figure 6 where the final state (606) can be reached directly through path 614 but it can also be reached in directly passing first through paths 610 or 612 to state 604 and then through path 616 to the final state (606). Therefore, the specification does not provide adequate support for the newly added limitations of claims 1, 19, 20, and 21.

6. Any claims not specifically addressed are rejected by virtue of their dependencies.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-2, 10, 11, 13, 15-17, 19-21, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over I'Anson et al (EPO 0474932), in view of Park (US 6363458), in view of Shanklin et al (US 6487666) and further in view of Mahajan et al (US 6628624).

As per claims 1, and 19-21, I'Anson discloses identifying at least two valid states associated with the network protocol in which a first host system communicating with a second host system using the network protocol may be placed; defining at least one valid transition between a first state of the at least two valid states and a second state of the at least two valid states; determining that a connection under the network protocol is in the first state; analyzing the stream based at least in part on the determination that the connection under the network protocol is in a first state to determine whether the packet is

associated with the at least one valid transition (see p. 3 lines 22-39 and p. 4 lines 27-49).

I'Anson fails to disclose defining an invalid state with a plurality of transitions to the invalid state and expressing the at least one valid transition and the invalid transition in the form of a regular expression and using the regular expression to analyze the network protocol stream.

However, Park teaches the use of an invalid state with a plurality of transitions to the invalid state (see column 7 line 15 through column 8 line 41 and Figure 2a) and Shanklin et al teaches the use of regular expressions (see column 6 lines 39-57).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the invalid state with a plurality of transitions to the invalid state of Park and Shanklin et al's regular expressions defining all transitions to analyze the protocol of I'Anson.

Motivation to do so would have been to invalidate requests and to recognize and evaluate identifiers, special symbols, or other tokens.

The modified I'Anson, Park, and Shanklin et al system fails to explicitly disclose the transitions to the invalid state being direct.

However, Mahajan et al teaches direct transitions from a first state to a final state (see column 5 line 53 through column 6 line 8).

At the time of the invention it would have been obvious to a person of ordinary skill in the art for the transitions of the modified I'Anson, Park, and Shanklin et al system to be direct.

Motivation to do so would have been to allow the information to be forwarded immediately thereby increasing the speed of the system.

As per claim 2, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system discloses compiling the regular expression into computer code (see Shanklin et al column 6 lines 39-57).

As per claims 10-11, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system discloses keeping track of which of the at least two states the first host system currently is in and changing the tracked state of the first host system from the first of the at least two states to the second of the at least two states in the event the analysis of the network protocol stream indicates the at least one valid transition has taken place (see I'Anson p. 4 lines 27-49).

As per claim 13, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system discloses the invalid transition

indicates that a security-related event has taken or is taking place and defining a further state corresponding to the invalid operation (see p. 4 lines 18-26 where the security related event is the intrusion of Shanklin et al as applied with Park).

As per claims 15-17, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system discloses keeping track of which state, from the set comprising the at least two states and the further state, the first host system currently is in; and changing the state of the first host system to the further state in the event that the analysis of the network protocol stream indicates the invalid operation has taken place and in the event that the analysis of the network protocol stream indicates the invalid operation has taken place, an indication that the invalid operation has taken place then discontinuing analysis of the network protocol stream once the state of the first host system has been changed to the further state (see I'Anson page 4).

As per claims 25 and 26, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system discloses the invalid transitions correspond to a plurality of disallowed security events and performing error handling (see Shanklin column 2 lines 16-21 and Park column 8 lines 12-20).

9. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified I'Anson, Park, Shanklin et al, and Mahajan et al system as applied to claim 2 above, and further in view of Wijendran (AWK-to-C Translator).

As per claims 3-4, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system fails to disclose the use of optimal C programming language code.

However, Wijendran teaches this optical C code (see page 1).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use Wijendran's optical C code in the modified I'Anson, Park, Shanklin et al, and Mahajan et al system.

Motivation to do so would have been to maximize runtime performance (see page 1).

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified I'Anson, Park, Shanklin et al, and Mahajan et al system as applied to claim 2 above, and further in view of Mangione-Smith (How many vector registers are useful?).

As per claim 5, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system fails to disclose the use of nearly optimal computer code.

However, Mangione-Smith teaches nearly optical code (see page 1).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use Mangione-Smith's nearly optical code in the modified I'Anson, Park, Shanklin et al, and Mahajan et al system.

Motivation to do so would have been that nearly optimal code requires less vector registers (see page 1).

11. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified I'Anson, Park, Shanklin et al, and Mahajan et al system as applied to claim 1 above, and further in view of Blam (US 6467041).

As per claim 6, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system fails to disclose copying the stream to a third party to be analyzed.

However, Blam teaches a third party analyzer (see column 6 lines 5-29).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use Blam's third party analyzer to analyze the protocol analyzer of the modified I'Anson, Park, Shanklin et al, and Mahajan et al system.

Motivation to do so would have been to perform the analysis regardless of what resources are on the network or client (see column 6 lines 5-29).

As per claims 7-9, the modified I'Anson, Park, Shanklin et al, Mahajan et al and Blam system discloses the network protocol stream comprises packets of data, each packet being associated with a sequence number indicating its position relative to other packets in the protocol stream, and the third system reassembles the packets into the order indicated by the respective sequence numbers of the packets received where a copy of the network protocol stream is maintained in the third system until analysis has been completed and in the event the packets are received by the third system in sequence number order, a copy is maintained in the third system only of those packets comprising the portion of the network protocol currently under analysis (see I'Anson pages 4-5 and Blam column 6 lines 5-29).

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified I'Anson, Park, Shanklin et al, and Mahajan et al system as applied to claim 1 above, and further in view of Brown et al (US 6604075).

As per claim 23, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system fails to disclose performing error

handling that is specific for one of the plurality of invalid transitions.

However, Brown et al teaches the error handling of a specific invalid state (see column 11 lines 9-18).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include error handling of a specific invalid state in the modified I'Anson, Park, Shanklin et al, and Mahajan et al system.

Motivation to do so would have been that the error needs to be handled by an application or user with specific knowledge associated with the processing.

13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified I'Anson, Park, Shanklin et al, and Mahajan et al system as applied to claim 1 above, and further in view of Oran (US 6275574).

As per claim 24, the modified I'Anson, Park, Shanklin et al, and Mahajan et al system fails to disclose grouping the regular expressions according to their similarity.

However, Oran teaches such grouping (see column 8 lines 8-21).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to group the regular

expressions of the modified I'Anson, Park, Shanklin et al, and Mahajan et al system.

Motivation to do so would have been to define precedence for the regular expressions.

Response to Arguments

14. Applicant's arguments with respect to claims 1 and 19-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tsuda et al. and Crayford teach methods of direct transitions to a final state.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pyzocha whose telephone number is (571) 272-3875. The examiner can normally be reached on 7:00am - 4:30pm first Fridays of the bi-week off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-38655. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJP

EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER